

### **REMARKS**

Claims 1-16 have been cancelled and claims 17-24 have been added. There is full support in the specification as originally filed for the newly added claims. Applicant submits herewith a petition for a one month extension of time.

Claim 17 recites a process for producing a flexible polyurethane foam for use as mattress, upholstery, or carpet material. The process comprises the steps of providing compounds which are reactive toward isocyanates, providing an isocyanate, and providing at least one organic or inorganic acid anhydride. Next, the isocyanate and the organic or inorganic acid anhydride are mixed outside the presence of the compounds which are reactive toward isocyanates to form a mixture having the acid anhydride in an unreacted state. The process further includes the step of reacting the isocyanate-reactive compounds and the mixture in the presence of at least one urethane forming catalyst selected from the group consisting of organic amines and organic metal compounds such that the acid anhydride remains in the unreacted state throughout the reaction of the isocyanate-reactive compounds and the mixture to form the flexible polyurethane foam. The flexible polyurethane foam formed from this process has a density of from 20 to 70 kg/m<sup>3</sup> with the acid anhydride in the unreacted state capable of being hydrolyzed to prevent deterioration of the flexible polyurethane foam when exposed to hot or humid conditions.

The presence of the unreacted acid anhydride in the mixture with the isocyanate stabilizes the foamed product. Those skilled in the art recognize that the isocyanate and the isocyanate-reactive components, commonly polyols, react much more vigorously than do the

polyols with the acid anhydride. Since the isocyanate and the acid anhydride are mixed, the polyols will react with the isocyanates and the acid anhydride will remain in the unreacted state. This stabilization results because, after forming the polyurethane foam, the acid anhydride remains in the unreacted, or non-hydrolyzed, state and can undergo hydrolysis when in the presence of moisture. Once hydrolyzed in the polyurethane foam, the acid deactivates any tertiary amine catalysts, thereby inhibiting the catalysts ability to cleave urethane and urea bonds. (*see page 4, lines 21-46, page 23, lines 16-42*). The stability of the foam and the prevention of the cleaving of the bonds allow the foamed product to be exposed to hot or humid conditions without deteriorating. Examples of the hot or humid conditions include hot steam disinfection for sterilization of mattresses or hot steam cleaning of upholstered furniture or carpets (*see page 5, lines 21-25*).

None of the cited references disclose, teach, or suggest such a process of producing a flexible polyurethane foam for use as mattress, upholstery, or carpet material wherein the acid anhydride remains in an unreacted state to prevent deterioration. The cited references do disclose a process for preparing an improved polyurethane resin having a mixture of the acid anhydride and the polyol to improve the cell size of the foam, i.e., to participate in the reaction. In other words, the acid anhydride is hydrolyzed by mixing with the polyol and this mixture is then reacted with the isocyanate to form the foam. The novel step of the subject invention are not disclosed, taught, or suggested, and therefore, it is believed that claims 17-24 are allowable over the cited prior art references.

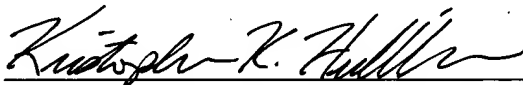
**Applicant: Martin Kreyenschmidt**  
**Serial No.: 09/763,280**  
**Group Art Unit: 1711**

Accordingly, it is respectfully submitted that the Application, as amended, is now presented in condition for allowance, which allowance is respectfully solicited. Applicant believes that no fees are due, however, if any become required, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account 08-2789.

Respectfully submitted

**HOWARD & HOWARD ATTORNEYS, P.C.**

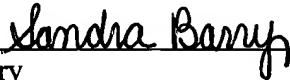
5/28/2004  
Date

  
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**CERTIFICATE OF MAILING**

I hereby certify that the attached **Amendment** is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on *May 28, 2004.*

  
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Sandra Barry

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